Introduction to Virtual Reality
Suitable for: G10 - G12

Prerequisite: Web Development With JavaScript
Duration: 20 Weeks
Classes per Week: 1 class (45 minutes each)

Course Overview:

This course introduces students to the world of Virtual Reality (VR) using A-Frame, an open-source web framework for building VR experiences. Students will learn the basics of VR, including creating 3D objects, textures, animations, and adding interactivity. By the end of the course, students will be able to create immersive VR scenes and understand how VR applications are built.

Covered Topics

Unit 1: Introduction to VR and A-Frame Basics

- Understanding Virtual Reality and its applications
- Introduction to A-Frame and setting up a VR environment
- Learning basic attributes like position, rotation, and scale

Introduction to Virtual Reality
Suitable for: G10 - G12

Unit 2: Building and Texturing Objects
- Creating basic 3D shapes like Lego bricks
- Applying textures to objects for realism
- Setting up sky and ground elements to build immersive scenes

Unit 3: Text and 3D Modeling
- Adding text to VR environments
- Importing and positioning 3D models in the scene
- Animating 3D models to add movement and interactivity

Unit 4: Advanced VR Elements and Interactivity
- Creating dynamic elements like black holes and flying dragons
- Designing interactive sea creatures and ocean sounds
- Controlling animation speed for better user interaction

Introduction to Virtual Reality
Suitable for: G10 - G12

Unit 5: Final Projects and Complex Animations

- Developing interactive projects like box jumping and stickman farm
- Building unique animations, such as Shrek-inspired movements
- Final project: Designing a comprehensive VR scene incorporating learned skills

Materials Needed:

- Computer or tablet
- Internet connection for programming and resources
- Chrome Browser

Assessment

At the end of each lesson, learners will be assessed on their ability to create VR elements, work with 3D objects, and apply animations within VR scenes. Assessments will focus on creativity, accuracy, and functionality of the VR experience they create.

Certification

A certificate of completion will be awarded to students who successfully complete the course, recognizing their proficiency in introductory Virtual Reality development.